Attorney Docket No. 0756-1996

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)	Group Art Unit: 2815
Shunpei YAMAZAKI et al.	)	Examiner: J. Diaz
Serial No. 09/352,362	)	
Filed: July 13, 1999	)	
For: CRYSTALLINE SEMICONDUCTOR THIN FILM, METHOD OF FABRICATING THE SAME, SEMICONDUCTOR DEVICE, AND METHOD OF FABRICATING THE SAME	)	

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on June 22, 2005.

Adalia M Stamper

RESPONSE

Honorable Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The Official Action mailed March 22, 2005, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicants respectfully submit that this response is being timely filed.

The Applicants note with appreciation the consideration of the Information Disclosure Statements filed on October 14, 1999, April 9, 2001, December 12, 2001, March 21, 2002, September 20, 2002, September 30, 2003, April 30, 2004, and November 29, 2004. A further Information Disclosure Statement is submitted herewith and consideration of this Information Disclosure Statement is respectfully requested.

Claims 15-24, 28, 30-41, 46-115 and 123-178 are pending in the present application, of which claims 15, 17, 20, 22, 28 and 30-35 are independent. For the

reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 2 of the Official Action provisionally rejects claims 15-24, 28, 30-41, 46-115 and 123-178 under the doctrine of obviousness-type double patenting over the combination of claims 6-8, 17-22, 25 and 49-85 of copending Application Serial No. 10/081,767 and U.S. Patent No. 5,869,387 to Sato et al. The Applicants respectfully submit that the independent claims of the subject application are patentably distinct from the claims of the '767 application either alone or in combination with Sato.

As stated in MPEP § 804, under the heading "Obviousness-Type," in order to form an obviousness-type double patenting rejection, a claim in the present application must define an invention that is merely an obvious variation of an invention claimed in the prior art patent, and the claimed subject matter must not be patentably distinct from the subject matter claimed in a commonly owned patent. Also, the patent principally underlying the double patenting rejection is not considered prior art.

It is respectfully submitted that the independent claims of the present application are not a timewise extension of the invention as claimed in the '767 application either alone or in combination with Sato. Independent claims 15, 17, 28, 30, 31, 34 and 35 recite that asperities of a surface of a crystalline semiconductor thin film, which are formed by a laser light, are flattened by a heat treatment. This feature is not claimed in the '767 application. The Official Action asserts that claims 6-8 of the '767 application disclose a second heat treatment, which corresponds to the above-referenced feature of the independent claims of the present application (page 3, Paper No. 20050318). The Applicants respectfully disagree and traverse the above assertions in the Official Action.

The second heat treatment disclosed in claims 6-8 of the '767 application is performed for a crystalline semiconductor film having a warp, that is for a crystalline semiconductor film that has contracted under a tensile stress by laser irradiation and not for a crystalline semiconductor film having asperities on a surface thereof. Therefore, claims 6-8 of the '767 application do not teach or suggest that asperities of a surface of

a crystalline semiconductor thin film, which are formed by a laser light, are flattened by a heat treatment.

Furthermore, since the claims of the '767 application do not teach or suggest flattening asperities of a crystalline semiconductor film with a heat treatment, it is not clear how or why one of ordinary skill in the art at the time of the present invention would have been motivated to combine Sato with the invention as claimed in the '767 application. Also, the Official Action asserts that Sato teaches "that is well known in the art to treat a monocrystalline semiconductor film in a nitrogen atmosphere at a temperature of about 1200 °C ... or alternatively in a reducing atmosphere comprising hydrogen at a temperature of less than about 1200 °C" (page 3, Paper No. 20050318). However, the Official Action has not shown how or why this teaching in Sato, which appears to be related to a monocrystalline semiconductor film, could or should be applied to the heat treatment step of the claims of the '767 application, which is applied to a crystalline semiconductor film. Therefore, the Applicants respectfully submit that it would not have been obvious to combine the claims of the '767 application with Sato.

Independent claims 20, 22, 32 and 33 recite heating a crystallized semiconductor film in a reducing atmosphere. This feature is not claimed in the '767 application. It is not clear whether this feature is taught or suggested in Sato. In any event, as noted above, there is insufficient motivation to combine the invention as claimed in the '767 application with Sato.

Furthermore, claim 32 recites an etching step to remove an oxide and claim 33 recites a treatment with hydrofluoric acid to remove oxide. These features are not claimed in the '767 application and are not taught or suggested by Sato. The Official Action asserts that "claim 8 of the copending Application teaches the further step of etching the crystallized semiconductor film after the step of irradiating the film" (page 3, Paper No. 20050318). Claim 8 of the '767 application appears to recite "etching the second crystalline semiconductor film to form a crystalline semiconductor island"; however, claim 8 of the '767 application, either alone or in combination with Sato, does

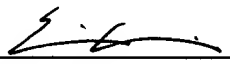
not appear to teach or suggest an etching step to remove an oxide or a treatment with hydrofluoric acid to remove oxide.

Therefore, the claims of the '767 application, either alone or in combination with Sato, do not teach or suggest the above-referenced features of the present invention. Reconsideration of the obviousness-type double patenting rejection is requested.

Paragraph 3 of the Official Action provisionally rejects claims 32-33, 60, 62, 63, 67, 69 and 70 under the doctrine of obviousness-type double patenting over claims 39 and 45 of copending Application Serial No. 09/352,194. In response, the Applicants respectfully request that the double patenting rejections be held in abeyance until an indication of allowable subject matter is made in either the present application or the copending application (see also MPEP § 804, Part I.B, page 800-19 of the August 2001 Revision). At such time, the Applicants will respond to any remaining double patenting rejections.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



Eric J. Robinson
Reg. No. 38,285

Robinson Intellectual Property Law Office, P.C.
PMB 955
21010 Southbank Street
Potomac Falls, Virginia 20165
(571) 434-6789